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Exercise 19(A)

1. Fill in the blanks.

i) $5+4 = 9$ and $5x+4x = 9x$

ii) $12+18 = 30$ and $12x^2y+18x^2y = 30x^2y$

iii) $7+16 = 23$ and $7a+16b = 7a+16b$

iv) $1+3 = 4$ and $x^2y+3xy^2 = x^2y+3xy^2$

v) $7-4 = 3$ and $7ab-4ab = 3ab$

vi) $12-5 = 7$ and $12x-5y = 12x-5y$

vii) $35-16 = 19$ and $35ab-16ba = 19ab$

viii) $28-13 = 15$ and $28ax^2-13a^2x = 28ax^2-13a^2x$

2. Fill in the blanks:

i) The sum of $-2$ and $-5 = -7$ and the sum of $-2x$ and $-5x = -7x$

ii) The sum of $8$ and $-3 = 5$ and the sum of $8ab$ and $-3ab = 5ab$

iii) The sum of $-15$ and $-4 = -19$ and the sum of $-15x$ and $-4y = -15+-4y$

iv) $15+8+3 = 26$ and $15x+8y+3x = 18x+8y$.

v) $12-9+15 = 12$ and $12ab-9ab+15ba = 12ab$.

vi) $25-7-9 = 9$ and $25xy-7xy-9yx = 9xy$.

vii) $-4-6-5 = -15$ and $-4ax-6ax-5ay = -10ax-5ay$.

3. Add:

i) $8xy$ and $3xy$

Ans- $8xy+3xy$
$= 11xy$

ii) $2xyz$, $xyz$ and $6xyz$

Ans- $2xyz+1xyz+6xyz$
$= (2xyz+1xyz)+6xyz$
$= 3xyz+6xyz$
$= 9xyz$

iii) $2a$, $3a$ and $4b$

Ans- $2a+3a+4b$
$= (2a+3a)+4b$
$= 5a+4b$

iv) $3x$ and $2y$

Ans- $3x+2y$

v) 5m, 3n and 4p

Ans- $5m + 3n + 4p$

vi) 6a, 3a and 9ab

Ans- $6a + 3a + 9ab$

$= (6a + 3a) + 9ab$

$= 9a + 9ab$

vii) 3p, 4q and 9q

Ans- $3p + 4q + 9q$

$= 3p + (4q + 9q)$

$= 3p + 13q$

viii) 5ab, 4ba and 6b

Ans- $5ab + 4ba + 6b$

$= (5ab + 4ba) + 6b$

$= 9ab + 6b$

ix) 50pq, 30pq and 10pr

Ans- $50pq + 30pq + 10pr$

$= (50pq + 30pq) + 10pr$

$= 80pq + 10pr$

x) -2y, -y and -3y

Ans = $-2y + (-y) + (-3y)$

=

xi) -3b and -b

Ans- $-3b + (-1b)$

$= -3b - 1b$

$= -4b$

xii) 5b, -4b and -10b

Ans = $5b + (-4b) + (-10b)$

$= (5b - 4b) - 10b$

$= 1b - 10b$

$= -9b$

xiii) -2c, -c and -5c

Ans- $-2c + (-1c) + (-5c)$

$= (-2c - 1c) - 5c$

$= -3c - 5c$

$= -8c$

4. Evaluate:

i) $6a - a - 5a - 2a$

Ans- $6a - 8a$

$= -2a$

ii) $2b - 3b - b + 4b$

Ans $= 2b + 4b - 3b - 1b$

$= 6b - 4b$

$= 2b$

iii) $3x - 2x - 4x + 7x$

Ans- $3x + 7x - 2x - 4x$

$= 10x - 6x$

$= 4x$

iv) $5ab + 2ab - 6ab + ab$

Ans $= 5ab + 2ab + 1ab - 6ab$

$= 8ab - 6ab$

$= 2ab$

v) $8x - 5y - 3x + 10y$

Ans- $8x - 3x - 5y + 10y$

$= 5x + 5y$

5. Evaluate:

i) $-7x + 9x + 2x - 2x$

Ans $= 9x + 2x - 7x - 2x$

$= 11x - 9x$

$= 2x$

ii) $5ab - 2ab - 8ab + 6ab$

Ans $= 5ab + 6ab - 2ab - 8ab$

$= 11ab - 10ab$

$= 1ab = ab$

iii) $-8a - 3a + 12a + 13a - 6a$

Ans- $12a + 13a - 8a - 3a - 6a$

$= 25a - 17a$

$= 8a$

iv) $19abc - 11abc - 12abc + 14abc$

Ans- $19abc + 14abc - 11abc - 12abc$

$= 33abc - 23abc$

$= 10abc$

6. Subtract the first term from the second:

i) $4ab, 6ba$

Ans - $6ba - 4ab$

$= 2ab$

ii) $4.8b, 6.8b$

Ans $= 6.8b - 4.8b$

$= 2.0b = 2b$

iii) $3.5abc, 10.5abc$

Ans $= 10.5abc - 3.5abc$

$= 7.0b = 7b$

iv) $3\frac{1}{2}mn$, ~~and~~ $8\frac{1}{2}nm$

Ans - $8\frac{1}{2}nm - 3\frac{1}{2}mn$

$= \frac{17}{2}nm - \frac{7}{2}mn$

$= \frac{17-7}{2}mn = \frac{10}{2}mn$

$= 5mn$

7. Simplify:

i) $2a^2b^2 + 5ab^2 + 8a^2b^2 - 3ab^2$

Ans - $2a^2b^2 + 8a^2b^2 + 5ab^2 - 3ab^2$

$= 10a^2b^2 + 2ab^2$

ii) $4a + 3b - 2a - b$

Ans - $4a - 2a + 3b - 1b$

$= 2a + 2b$

iii) $2xy + 4yz + 5xy + 3yz - 6xy$

Ans - $2xy + 5xy - 6xy + 4yz + 3yz$

$= 1xy + 7yz$

$= xy + 7yz$

iv) $ab + 15ab - 11ab - 2ab$

Ans - $1ab + 15ab - 11ab - 2ab$

$= 16ab - 13ab$

$= 3ab$

v) $6a^2 - 3b^2 + 2a^2 + 5b^2 - 4a^2$

Ans - $6a^2 + 2a^2 - 4a^2 - 3b^2 + 5b^2$

$= 4a^2 + 2b^2$

vi) $8abc + 2ab - 4abc + ab$

Ans - $8abc - 4abc + 2ab + 1ab$

$= 4abc + 3ab$

vii) $9xyz + 15xyz - 10zyx - 2zxy$

Ans- $9xyz + 15xyz - 10xyz - 2xyz$

$= 24xyz - 12xyz$

$= 12xyz$

viii) $13pqr + 2p + 4q - 6pqr + 5pqr$

Ans- $13pqr + 5pqr - 6pqr + 2p + 4q$

$= 18pqr - 6pqr + 2p + 4q$

$= 12pqr + 2p + 4q$

ix) $4ab + 0 - 2ba$

Ans- $4ab - 2ab + 0$

$= 2ab + 0$

$= 2ab$

x) $6x^2y - 2xy^2 + 5x^2y - xy^2$

Ans- $6x^2y + 5x^2y - 2xy^2 - 1xy^2$

$= 11x^2y - 3xy^2$